Issue 1037

K-STATE Research and Extension

Extension Agronomy

eUpdate

01/30/2025

These e-Updates are a regular weekly item from K-State Extension Agronomy and Kathy Gehl, Agronomy eUpdate Editor. All of the Research and Extension faculty in Agronomy will be involved as sources from time to time. If you have any questions or suggestions for topics you'd like to have us address in this weekly update, contact Kathy Gehl, 785-532-3354 kgehl@ksu.edu, or Dalas Peterson, Extension Agronomy State Leader and Weed Management Specialist 785-532-0405 dpeterso@ksu.edu.

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1. Preplant herbicide applications for kochia control

Now is the time to finalize plans for kochia control. In western Kansas, kochia is among the first summer annual weeds to emerge in the spring. Recent research suggests that kochia can begin emerging in early February, with most kochia emerging by late April. At the Southwest Research & Extension Center in Garden City in 2024, emerged kochia seedlings were documented on February 7. This early emergence resulted from a snowstorm in late January, which provided moisture, followed by temperatures in the 50s and 60s during the first week of February.

Good control of the first dense flush of kochia is essential for obtaining a good crop yield. Early-emerging seedlings use the limited spring soil moisture in dryland production fields. Kochia seedlings emerge in dense populations, making adequate herbicide coverage difficult (Figure 1). In addition, glyphosate-resistant kochia is prevalent across western Kansas, making kochia control even more challenging. For these reasons, it is important to apply preemergence herbicides in late winter or early spring to control kochia before it emerges. This article will be the first in a series discussing specific options for various cropping scenarios.

Figure 1. Emerged kochia seedlings in a fallow field. Photo by Sarah Lancaster, K-State Research and Extension.

Herbicide program components to effectively manage kochia at germination

To successfully manage kochia, a herbicide program needs two components:

1. a very soluble and effective herbicide that can be incorporated with very little precipitation, such as dicamba; and
2. a herbicide that has longer residual activity, which will require perhaps 0.75 inches or more precipitation for adequate incorporation, such as atrazine.

Precipitation events during late winter are often too small to activate longer-lasting residual herbicides, but dicamba may control kochia for 4 to 6 weeks until atrazine is incorporated.

The best time to apply herbicides for kochia control is **prior to kochia emergence,** generally January through the first week of March but, depending on weather conditions. Later applications, for example, at the time of burndown, are more likely to occur after kochia emergence, which increases the risk of control failure (Figure 2). Fall-applied treatments can help ensure timely application; however, they are not likely to control later flushes of kochia effectively (Figure 3).

Other herbicides with good preemergence kochia activity include: mesotrione, metribuzin, saflufenacil (Sharpen), sulfentrazone. Be sure to check product labels for crop-specific planting intervals.

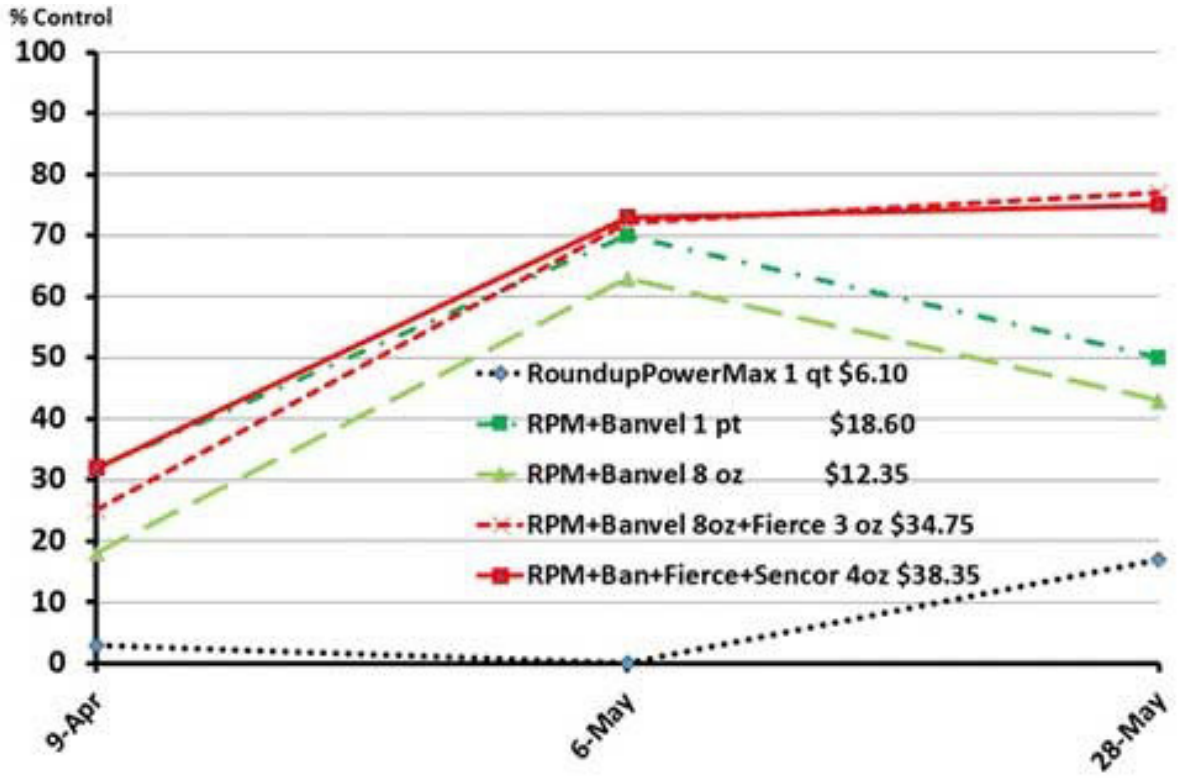

Figure 2. EPP/POST herbicides applied March 10, 2015 for kochia control at Tribune, KS. Kochia at cotyledon stage. Graph by C. Thompson, K-State Research and Extension.

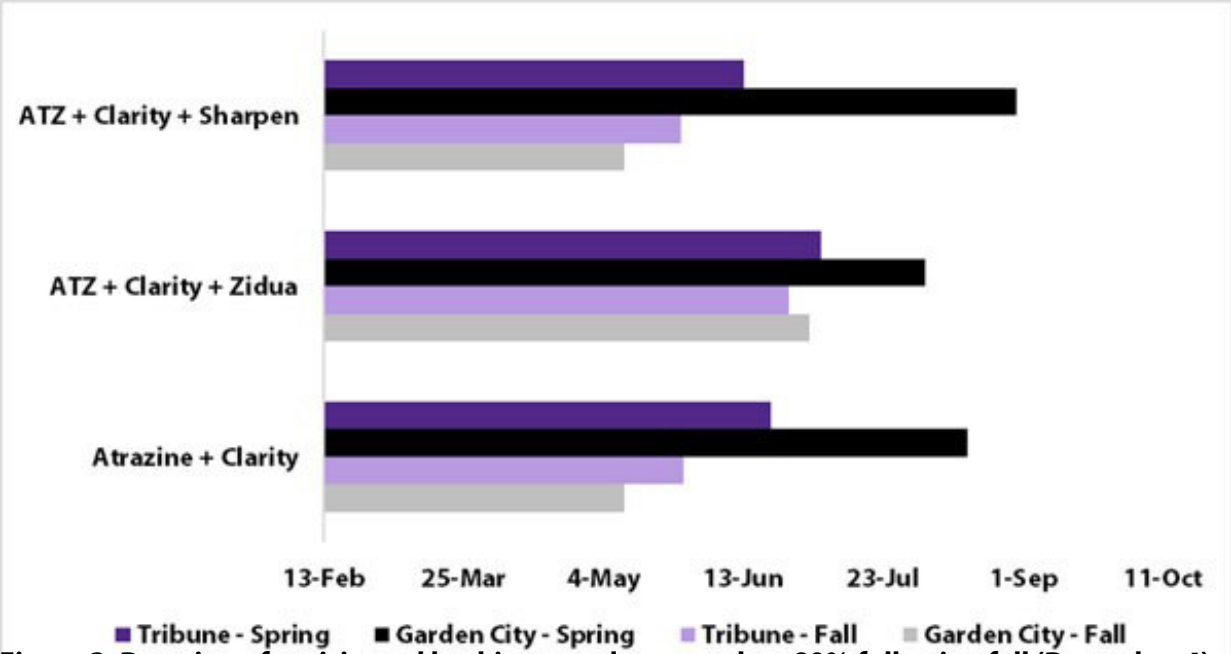

Figure 3. Duration of anticipated kochia control greater than 80% following fall (December 4) and spring (February 23) herbicide applications at two locations during 2015. Data from Vipan Kumar, K-State Research and Extension.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.

For more information on controlling kochia, see?the 2025 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland, K-State publication SRP1190.

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2. Wheat variety fall forage yield comparison for 2024-25

Fall forage yield is an important aspect of dual-purpose wheat production. In this system, wheat is typically sown earlier than for grain-only production, at higher seeding rates and with additional nitrogen fertilizer to maximize forage production.

The weather experienced during the fall is crucial to determine an average level of forage yield, with warm and moist weather typically resulting in greater yield than cool and dry weather conditions. Management practices that also maximize forage yield are early sowing, higher seeding rates, placement of in-furrow phosphorus fertilizer with the seed, and fall nitrogen fertilization.

While the weather is typically the most significant player in determining fall forage production, followed by management, there are differences among wheat varieties in forage production potential. Thus, the K-State Wheat Production Group compares the forage yield of several commonly grown wheat varieties and upcoming lines every year. This test is usually performed in the South Central Experimental Field near Hutchinson, Kansas (Figure 1), and the forage sampling occurs sometime during December (Table 1)

The sampling was conducted on December 12, 2024, and showed significant differences among varieties regarding forage accumulation. The average forage yield was 1,556 lbs of dry matter (DM) per acre, with a range from 826 to 1,970 lbs DM/a. The varieties that exhibited the highest forage yield were AP Sunbird, KS Ahearn, KS Providence, and KS Territory, which were statistically greater than KS Mako. The other varieties were not statistically different than the highest or lowest forage group.

Figure 1. Dual-purpose wheat trial near Hutchinson, KS. Photo provided by Romulo Lollato, K-State Research and Extension.

Table 1. Fall forage yield of wheat varieties sown under dual-purpose system near Hutchinson, KS. Forage was collected on December 12, 2024. Data is shown for the average of four replicates and the standard error of the mean (SEM), both in pounds of dry matter per acre (lbs DM/ac). Grouping is shown based on Holm-Sidak test. There were significant statistical differences among varieties at the 5% probability level. Varieties are listed in alphabetical order, and the bold highlight indicates the highest forage-yielding group.

Variety	Fall forage (lb DM/a)	SEM (lb DM/a)	Group
AP24 AX	1632	75	ab
AP Sunbird	**1803**	**166**	**a**
CLH10-153.022	1835	252	ab
CLH10-1853.014	1426	110	ab
KS Ahearn	**1881**	**254**	**a**
KS Bill Snyder	1481	95	ab
KS Mako	826	48	b
KS Providence	**1970**	**179**	**a**
KS Territory	**1856**	**135**	**a**
KS21H36*0	1682	114	ab
Kivari AX	1310	29	ab
Sheridan	1511	174	ab
AR Iron Eagle AX	1161	89	ab
AR Turret 25	1658	370	ab
CP7017AX	1154	196	ab
CP7869	1710	192	ab
Minimum	826		
Maximum	1970		
Average	1556		

Another important aspect of dual-purpose wheat production is how long each variety can be grazed in the spring. This is measured as the date of first hollow stem, and varieties can differ in as much as 20-30 days in achieving first hollow stem in the spring. The Wheat Production Group at K-State uses this very same trial to measure for first hollow stem during late February and early March, so keep tuned in for more information to come.

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3. World of Weeds - Old World Bluestems

Old World Bluestems (OWB) are the focus of this World of Weeds article. Two species commonly called OWB are Caucasian bluestem (*Bothriochloa bladhii*) and yellow bluestem (*Bothriochloa ischaemum*). There are several improved varieties of OWB, including King Ranch, Plains, WW B Dahl, WW Spar, and WW Iron Master bluestem. Even though they share the common name 'bluestem,' OWBs are not closely related to native bluestem species such as big bluestem, little bluestem, and broomsedge bluestem.

Ecology

Old world bluestems are warm-season perennial grasses native to Asia, Africa, and Australia. They were introduced into the U.S. for conservation purposes and as a forage crop for haying and grazing in the early 1900s, with seedings in Kansas probably occurring between the 1930s and 1960s. They are adapted to high calcareous and high pH soils and do well on any well-drained soil. They are very competitive with native species and are prolific seed producers. The invasive nature and relatively low palatability of quickly maturing OWBs allow them to increase once established.

Identification

Differentiating between OWB species without seedheads present is challenging because some vegetative characteristics are rather similar, with some range of variation within each species.

OWBs are bunch grasses, but yellow bluestem may eventually form a sod with continual heavy defoliation. They stand out in the landscape due to their light green color during the growing season and their light straw color when dormant (Figure 1). Leaves are thin (less than 0.25 inch) and pointed, up to 12 inches long, with sporadic long hairs at the base of the leaf (Figure 2). Leaf sheaths are hairless, and ligules are a hairy membrane.

Figure 1. Old World Bluestems have light green foliage (left) that turns straw-colored in the fall (right). Photos by Walt Fick, K-State Research and Extension.

Figure 2. Caucasian bluestem leaf hairs. Image by Mike Haddock, KSwildflower.org

Seed heads begin to emerge in mid-June to early July, which is earlier than many native species. Plants reach 1.5 to 3 feet in height by mid-summer. Nodes of Caucasian bluestem are purple-tinged and may have short hairs.

Inflorescences are typically 2.5 to 6 inches long. Yellow bluestem has 4 to 12 'fuzzy' branches about the same length, arranged in a fan that originates toward the base of the seedhead. Caucasian bluestem has several more reddish-purple branches that get shorter toward the top of the seedhead (Figure 3).

Figure 3. Inflorescence of Caucasian bluestem (left) and Yellow bluestem (right). Images by Mike Haddock, KSwildflower.org

Management

Both glyphosate and imazapyr (Arsenal, others) can control OWB. Current recommendations include mowing or burning followed by a broadcast application of glyphosate (3 lb ae/A) or imazapyr (0.5 lb ae/A). Ideally, herbicides will be applied before an infestation is widespread, which would allow spot treatment with a 2.5% (5 pints/25 gal) glyphosate solution or 1% (2 pts/25 gal) imazapyr. Also, prescribed burns during the growing season (late July and August) with abundant fuel and slow-moving fires have been able to significantly reduce OWB in native stands.

Re-establishing desirable vegetation may be a challenge with either glyphosate or imazapyr. Native vegetation, especially many native tallgrasses, seems to be more tolerant of imazapyr, which may allow for the survival of many desirable plants if treating invading OWB stands.

The use of trade names is for clarity to readers and does not imply endorsement of a particular product, nor does exclusion imply non-approval. Always consult the herbicide label for the most current use requirements.

For more information on controlling Old World Bluestem, see the 2025 Chemical Weed Control for Field Crops, Pastures, Rangeland, and Noncropland, K-State publication SRP-1190.

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4. Join the conversation on cover crops by participating in a new survey

Kansas State University, in collaboration with the Colorado Conservation Tillage Association (CCTA) and the Kansas Natural Resources Conservation Service (NRCS), invites all producers from the semi-arid Great Plains region to participate in a survey that will gain insight into how producers view incorporating cover crops into their cropping systems.

There have been many cover cropping surveys conducted nationwide. However, many of these participants come from regions in the United States where there are more rainfall events or irrigated acres. Therefore, the semi-arid Great Plains region is not adequately represented, and the data collected may not be practical for agricultural production systems in this region. This region-specific survey will bring new perspectives on growing cover crops in water-limited environments, as they are becoming a popular conservation practice.

This survey is being conducted to gain producers' perspectives on the use of cover crops in water-limited environments, particularly in drier regions of Kansas, Nebraska, and Colorado. The survey includes questions regarding 1) management practices, 2) resource concerns, 3) if cover crops are used, 4) why or why not cover crops are incorporated, 5) benefits and limitations of using cover crops, and 6) the USDA Program assistance regarding cover crops. At the conclusion of the survey, participants will be asked if they would like to participate in an optional follow-up in-person interview. Overall, survey participants will provide their perspectives and insights on cover crop use in their operation. All identities will be kept confidential outside of KSU, CCTA, and Kansas NRCS. Participant information, even if identities are removed, will not be used or distributed for future research studies.

All data collected from the survey and interviews will be used to generate extension publications on management guidelines for successful cover cropping in semi-arid regions. This data will also provide recommendations for reviewing USDA farm and conservation programs that will align better with current farming practices adopted by producers to improve soil health in semi-arid environments.

We invite all producers in the semi-arid region, whether they have experience with cover crops or not, to take our survey. To access the survey, follow one of three steps below:

- Click this link to access the survey.
- Type in the following web address into your web browser: https://kstate.qualtrics.com/jfe/form/SV_cZmbxKImWhjkXQ2
- Scan the QR Code in the graphic below.

K-STATE Research and Extension

CTA

USDA Natural Resources Conservation Service

If you have any questions regarding this survey, please feel free to contact:

Dr. Augustine Obour at (785) 625-3425 ext. 215 or abour@ksu.edu or

Dr. Logan Simon at (620)276-8286 or lsimon@ksu.edu

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5. K-State Weed Management Schools scheduled for mid-February

A series of weed management schools will take place in northwest and north central Kansas during the month of February and are hosted by local K-State Research & Extension county and district offices.

Controlling difficult weeds continues to be a significant challenge for producers. To address the topic of weed control, K-State Research and Extension has scheduled five regional weed control programs in February. This program has been designed to help producers and agri-business retailers improve weed control with challenging species and weather conditions.

The dates and locations are:

February 12 in St.Francis, KS – 5:30 p.m. to 8:30 p.m.
Cheyenne Co. 4-H Building

February 13 in Phillipsburg, KS– 9:30 a.m. to 12:30 p.m.
Phillips Co. Fair Building

February 13 in Ness City, KS – 5:30 p.m. to 8:30 p.m.
Ness County 4-H Building

February 17 in Mankato, KS – 3:00 p.m. to 6:00 p.m.
Mankato Community Center 214 N. High Street

February 18 in Holyrood, KS - 9:30 a.m. to 12:30 p.m.
St. Peter Lutheran Church Parish Hall 209 S County Rd

Presenters at the schools include Sarah Lancaster, K-State extension weed science specialist, Jeremie Kouame, K-State weed scientest, and local KSRE extension agents. Topics will include:

- A systems approach to weed management
- Pre-emergent herbicides and climate
- Strategic and occasional tillage for weed management
- Know your K-State Chemical Weed Control book

Three credit hours for 1A certification and CCA credits have been applied for.

There is no cost for the schools. However, pre-registration is requested by Wednesday, February 5, for all meetings. You can register online at www.northwest.ksu.edu/events or by calling your local Extension Office.

2025
K-State NW Weed Management Schools

Topics

- A systems approach to weed management
- Pre-emergent herbicides and climate
- Sorghum pre-emergent and weed size for post applications
- Strategic and Occasional Tillage

Speakers

- Sarah Lancaster, K-State Extension Weed Specialist
- Jeremie Kouame, K-State Weed Scientist

There is no cost to attend. See specific location information at www.northwest.ksu.edu/events

Wednesday	Thursday	Thursday	Monday	Tuesday
February 12, 2025	*February 13, 2025*	*February 13, 2025*	*February 17, 2025*	*February 18, 2025*
5:30pm - 8:30pm	**9:30am - 12:30pm**	**5:30pm - 8:30pm**	**3:00pm - 6:00pm**	**9:30am - 12:30pm**
Cheyenne Co. 4-H Building North College St. St. Francis, KS	Phillips County Fair Building 1481 HWY 183 Phillipsburg, KS	Ness County 4-H Building 302 W. Nevada Ness City, KS	Mankato Community Center 214 N. High Street Mankato, KS	St. Peter Lutheran Church Parish Hall 209 S County Rd Holyrood, KS
Sunflower District 785-462-6281	Phillips-Rooks District 785-543-6845	Walnut Creek District 785-798-3921	Post Rock District 785-282-6823	Midway District 785-472-4442 Cottonwood District 785-628-9430

REGISTER NOW

K-STATE Research and Extension

Please register by **Feb 10th**
www.northwest.ksu.edu/events

Kansas State University is committed to making its services, activities and programs accessible to all participants. If you have special requirements due to physical, vision or hearing disability, contact Jeanne Falk Jones, K-State Agronomist for 785-462-6281.

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6. K-State Crop Talk webinar series kicks off on February 11

The popular K-State Crop Talk online webinar series is back and set to start on February 11, 2025. The Crop Talk series will highlight several topics important to crop producers in north central and northwest Kansas. Topics include weed management, maximizing irrigation applications, leveraging precision ag tools, dryland tillage and rotations, and corn stunt. Continuing education credits will be offered, with one credit for each session.

Each webinar will begin at 12:00 pm (CST) and last until 1:00 pm, beginning with the first on Tuesday, February 11.

Upon registration, participants will receive an email with instructions on how to attend via Zoom or YouTube. These virtual webinars are open to all, and there is no cost. Register online at https://www.northwest.k-state.edu/events or call your local extension office.

A complete list of webinars, with dates, topics, and speakers, is detailed below.

February 11 – **Weed Management in the Age of New Technology**
Sarah Lancaster, K-State Weed Science Specialist

February 18 – **Getting the Most out of Your Irrigation Water**
Jonathan Aguilar, K-State Irrigation Engineer

February 25 – **Leveraging Precision Ag Tools**
Deepak Joshi, K-State Precision Ag Specialist

March 4 – **Dryland Tillage and Rotations**
Lucas Haag, K-State Northwest Area Agronomist

March 11 – A New Corn Disease: Corn Stunt
Anthony Zukoff, K-State Entomologist, and Rodrigo Onofre, K-State Plant Pathologist


Broadcast Live
12:00pm - 1:00pm CST via ZOOM and YouTube
CROPtalk
Webinar Series
K-STATE
Research and Extension
Focused on crop production in Northwest and North Central Kansas
February
11
Weed Management in the Age of New Technology
Sarah Lancaster,
K-State Extension Weed Scientist
18
Getting the Most Out of Your Irrigation Water
Jonathan Aguilar,
K-State Irrigation Engineer
25
Leveraging Precision Ag Tools
Deepak Joshi,
K-State Extension
Precision Ag Specialist
March
4
Dryland Tillage and Rotations
Lucas Haag,
K-State NW Area Agronomist
11
A New Corn Disease: Corn Stunt
Anthony Zukoff,
K-State Entomologist
Rodrigo Onofre,
K-State Plant Pathologist
Certified Crop Advisor (CCA) Credits will be offered
register to attend at
www.northwest.ksu.edu/events
Links for joining will be sent after registration
For more information, contact Sandra L. Wick
Post Rock Extension District Crop Production Agent
swick@ksu.edu 785-282-6823 postrock.ksu.edu
SCAN TO REGISTER
Kansas State University Agricultural Experiment Station and Cooperative Extension Service
K-State Research and Extension is an equal opportunity provider and employer.

7. Wheat Rx seminar on February 12 in Salina

A prescription for producing high-yielding and high-quality wheat is just what the doctor ordered for Kansas wheat producers. Kansas Wheat Rx combines suggested management practices for the economical and sustainable production of high-quality winter wheat in Kansas.

Mark the calendar now for an upcoming seminar on February 12 at the Great Plains Corporate Office in Salina, KS. Speakers will discuss variety selection, weed control, disease management, soil fertility, and more. Attendees will also learn more about Great Plains Ag, tour its Salina facility, and about a new project between K-State and the Kansas Wheat Commission to help growers benefit from ongoing government and private conservation programs.

Program agenda:

8:30 AM – Coffee and registration
8:50 – Welcome by Aaron Harries, Kansas Wheat Commission
9:00 – Dr. Allan Fritz, K-State wheat breeder
9:45 – Dr. Sarah Lancaster, K-State weed science specialist
10:30 – Break
10:45 – Dr. Kelsey Andersen Onofre, K-State wheat pathologist
11:30 – Dr. Dorivar Ruiz Diaz, K-State soil fertility specialist
12:15 – Lunch
1:00 – Dr. Romulo Lollato, K-State wheat and forage specialist
1:45 – Great Plains facility tour

This event is free for members of the Kansas Association of Wheat Growers (KAWG). It costs $110 for non-members; however, the event fee includes KAWG membership.

Online registration is open at kswheat.com/wheatrx

These programs are part of Wheat Rx, a partnership between Kansas Wheat and K-State Research and Extension, to disseminate the latest research recommendations for high-yielding and high-quality wheat to Kansas wheat farmers. This effort includes a series of extension publications at kswheat.com/wheatrx and educational outreach like the upcoming seminars.

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